

-- Fig. 6 is a graph showing the relationship between nitrogen partial pressure and porosity in porous iron materials obtained when pure iron (99.99%) is melted and cast under pressurization with a nitrogen-argon mixed gas with different partial pressures under constant total pressure of 2.1 MPa. --

Please replace the paragraph beginning at page 5, line 12, with the following rewritten paragraph:

-- Fig. 7 is a graph showing the relationship between nitrogen partial pressure and nitrogen content in porous iron materials obtained when pure iron (99.99%) is melted and cast under pressurization with a nitrogen-argon mixed gas with different partial pressures under constant total pressure of 2.1 MPa. --

Please replace the paragraph beginning at page 6, line 7, with the following rewritten paragraph:

-- Fig. 14 (a) to Fig. 14 (h) are partially cut-away oblique views of porous metal materials in various forms which can be manufactured by the method of the present invention. --

Please replace the paragraph beginning at page 6, line 14, with the following rewritten paragraph:

-- Fig. 16 (a) to Fig. 16 (d) are electronically processed images (corresponding to optical micrographs) showing the pore distribution state of four different porous copper materials obtained by melting at 1250°C under pressurization of 0.8 MPa with hydrogen-argon mixed gas. --

Please replace the paragraph beginning at page 6, line 23, with the following rewritten paragraph:

-- Fig. 18 is a graph showing the relationship between partial gas pressure ratio and porosity of the porous iron materials obtained by melting at 1650°C under pressurization of 1.5 MPa or 2.0 MPa with nitrogen-helium mixed gas. --

Please replace the paragraph beginning at page 7, line 2, with the following rewritten paragraph:

-- Fig. 19 (a) to Fig. 19 (d) are electronically processed images (corresponding to optical micrographs) illustrating the pore distribution state of four different porous ordinary steel

materials obtained by melting at 1650°C under pressurization with four different nitrogen-helium mixed gases with various partial gas pressure ratios. --

Please replace the paragraph beginning at page 25, line 7, with the following rewritten paragraph:

-- Fig. 14 (a) to Fig. 14 (h) are schematic oblique views, with partial cut-aways, of the porous metal body manufactured by the method of the present invention by continuous casting process. For example, the porous metal body shown in Fig. 14 (a) is a cylindrical metal body having a cross section corresponding to  $C_3$  in Fig. 2, and can be manufactured when the liquid phase/solid phase interface in the metal is moved at a constant movement rate along the transverse cross section of the cylinder from one end to the other. The cylindrical porous metal body shown in Fig. 14 (b) is a cylindrical metal body having a cross section corresponding to  $C_3$  in Fig. 2, and can be manufactured when the movement rate of the liquid phase/solid phase interface in the metal is changed intermittently along the transverse cross section of the cylinder from one end to the other. The cylindrical porous metal body shown in Fig. 14 (c) is a cylindrical metal body having a cross section corresponding to  $C_3$  in Fig. 2, and can be manufactured when the gas pressure is changed intermittently while the movement rate of the liquid phase/solid phase interface in the metal is constant along the transverse cross section of the cylinder from one end to the other. The cylindrical porous metal body shown in Fig. 14 (d) is a cylindrical metal body having a cross section corresponding to  $C_3$  in Fig. 2, and can be manufactured when the gas pressure and the movement rate of the liquid phase/solid phase interface in the metal along the transverse cross section of the cylinder from one end to the other are changed intermittently. As shown in Fig. 10, the cylindrical porous metal body shown in Fig. 14 (e) can be manufactured when the cooling mechanism 6 is located in the center of the mold and the liquid phase/solid phase interface in the metal is moved in the transverse cross sectional direction from the center of the cylinder toward the peripheral portion. The cylindrical porous metal body shown in Fig. 14 (f) can be manufactured when the cooling mechanism is located around the peripheral portion of the cylindrical mold and the liquid phase/solid phase interface in the metal is moved at a constant rate in the transverse cross sectional direction from the peripheral portion toward the center of the cylinder. In this case, a ring portion in which no pores are present can be formed around the periphery by performing the initial cooling rapidly. The

cylindrical porous metal body shown in Fig. 14 (g) can be manufactured by the procedure shown in Fig. 11. The porous metal body shown in Fig. 14 (h), which has a rectangular cross section, can be manufactured by the procedure shown in Fig. 11 with using a mold having a rectangular inner surface. --

Please replace the paragraph beginning at page 30, line 17, with the following rewritten paragraph:

-- Fig. 16 (a) to Fig. 16 (d) are electronically processed images (corresponding to optical micrographs) showing a portion of the transverse cross section each of the above-mentioned four different porous copper cylinders (a) to (d). These show that the pore size can be varied by adjusting the argon/hydrogen partial pressure ratio. --

Please replace the paragraph beginning at page 32, line 5, with the following rewritten paragraph:

-- Fig. 19 (a) to Fig. 19 (d) are electronically processed images (corresponding to optical micrographs) showing a portion of the transverse cross section each of the above-mentioned four different porous iron cylinders (a) to (d). These show that the pore size can be varied by adjusting the argon/hydrogen partial pressure ratio. --

Please replace the paragraph beginning at page 34, line 15, with the following rewritten paragraph:

-- More specifically, the copper raw material (99.99% purity) was maintained for 0.1 hour at 1250°C and  $5 \times 10^{-2}$  Torr, and then melted for 0.5 hour at 1250°C under a pressurizing gas atmosphere (0.3 MPa H<sub>2</sub> + 0.2 MPa Ar). Then, under the same pressurization conditions, the molten copper having the gas as dissolved therein was poured into a cylindrical mold and cooled from the bottom so that it solidified toward the cylindrical mold direction, yielding a porous copper column. This column was then converted with a wire cutter to obtain a porous copper cylinder with the shape shown in Fig. 24 and having an outside diameter of 22 mm and a thickness of 1 mm. --